

Final Supplemental Environmental Impact Statement Summary



King County

Brightwater
TREATMENT SYSTEM

Dear Community Member:

July 2005

For more than 40 years, King County has protected water quality in the Puget Sound region by providing wastewater treatment services to King, Pierce, and Snohomish counties. As our population grows, a new wastewater treatment plant called Brightwater is needed to serve people who live and work in north King and south Snohomish counties. Brightwater will be the third plant in our regional wastewater treatment system and the first major expansion since the 1960s. The entire Brightwater system includes a treatment plant, marine outfall, and associated conveyance pipelines.

Scientists are continuing to learn more about earthquake faults that are located throughout the Puget Sound region, and we are using that information to improve the design of Brightwater facilities. The environmental review for Brightwater has evaluated seismic and other impacts.

On April 11, 2005, King County issued the Brightwater Draft Supplemental Environmental Impact Statement, or EIS, which examines a range of potential impacts if an earthquake anywhere on the proposed Route 9 site were to damage new treatment plant facilities. The decision to issue a Supplemental EIS was made after studies conducted by King County and the U.S. Geological Survey in 2004 confirmed that an active strand of the South Whidbey Island Fault extends across the north portion of the proposed treatment plant site, where no facilities are planned. A fault in the Puget Sound region is considered active if it has moved within the past 16,000 years. The probability of an earthquake on the treatment plant site during the 50-year design life of the facilities is extremely remote.

A 30-day comment period began on the day the Draft Supplemental EIS was issued, giving members of the public an opportunity to review and comment on the analysis. King County received and responded to more than 600 individual comments. Though the comments were substantive and offered insight into the type of questions and concerns community members had, responses to the comments did not necessitate any substantial changes to the analysis presented in the Draft Supplemental EIS.

King County is issuing the Final Supplemental EIS on July 19, 2005. The Final Supplemental EIS document contains the responses to the public comments, clarifications on the analysis in the Draft Supplemental EIS, and some corrections to how materials were referenced in the index. When combined with the Draft Supplemental EIS, it will comprise the full Final Supplemental EIS.

We cannot prevent a major earthquake nor predict when or where it will occur, but we can protect public health by designing Brightwater to withstand strong seismic activity, coordinating plans with emergency responders, and training staff to respond to situations that could occur.

King County is continuing its mission to plan facilities that safely convey and treat our region's wastewater, and we appreciate the participation of community members during the Brightwater environmental review process, because it has helped us design a stronger, safer treatment plant.

We will keep community members informed and continue to provide opportunities for the public to ask questions and share concerns with Brightwater staff.

Sincerely,

Don Theiler

Division Director, King County Wastewater Treatment Division

This document is a summary of the Brightwater Final Supplemental Environmental Impact Statement, or Final Supplemental EIS. **For more information on how to get a full copy of the Final Supplemental EIS, including the Responses to Comments on the Draft Supplemental EIS, please see Pages 15 and 16.**

King County is issuing the Brightwater Final Supplemental EIS document on July 19, 2005. The document, combined with the two volume Draft Supplemental EIS issued on April 11, 2005, comprises the full Final Supplemental EIS.

The Brightwater Final Supplemental EIS documents, including the Responses to Comments on the Draft Supplemental EIS, are being distributed to affected jurisdictions and agencies as well as to citizens and community groups who commented on or purchased copies of the 2002 Draft EIS.

The Draft Supplemental EIS issued in April 2005 is **not** being redistributed with the Final Supplemental EIS, though copies are still available to interested community members by contacting the Brightwater project office (See Page 16). It is also available on the Brightwater project Web site at <http://dnr.metrokc.gov/wtd/brightwater/env/seis.htm>

What's Next?

After reviewing the analysis presented in the Supplemental EIS and considering other relevant information, King County Executive Ron Sims will make a decision about moving forward with Brightwater within a couple of weeks. A document explaining the decision will be made available to the public through the project Web site or by calling the Brightwater project office.



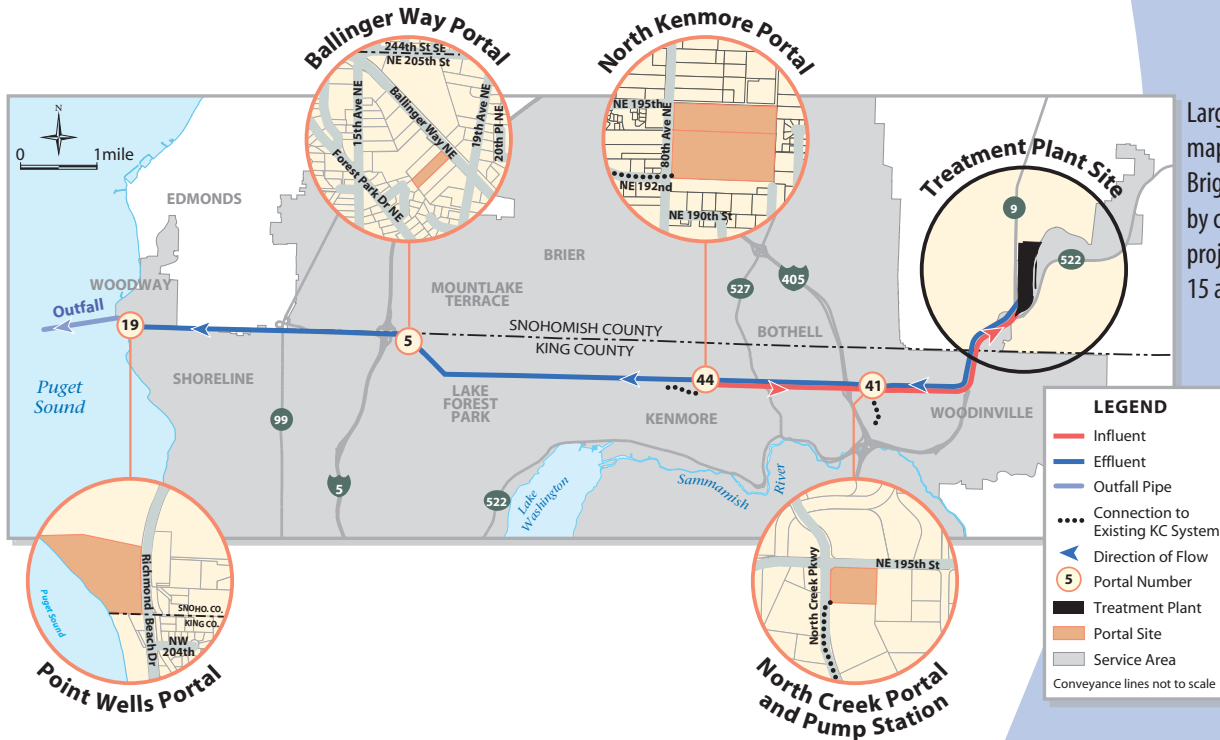
King County

Department of Natural Resources and Parks
Wastewater Treatment Division

What is Brightwater?

As our region grows, we need a new wastewater treatment system, called Brightwater, to protect public health, the economy and the environment. It consists of a wastewater treatment plant, which is currently proposed to be at the intersection of State Route 9 and SR-522 north of Woodinville, a 13-mile conveyance pipeline system along SR-522, 195th Street and the King-Snohomish County line, and an outfall in Puget Sound off Point Wells.

When it comes online in 2010, Brightwater will be the third regional plant in King County's wastewater treatment system. Brightwater is the first major expansion of our system since South Plant in Renton and West Point in Seattle were built in the 1960s.



Larger, more detailed maps are available on the Brightwater Web site, or by calling the Brightwater project office (see Pages 15 and 16)

Why a Supplemental Environmental Impact Statement?

The Supplement to the Brightwater Environmental Impact Statement, or Supplemental EIS, evaluates information about seismic features on the proposed Brightwater treatment plant site based on studies conducted after the Brightwater Final Environmental Impact Statement was issued in November 2003.

Following appeals by the Sno-King Environmental Alliance, or SKEA, the King County Hearing Examiner and a King County Superior Court judge upheld the adequacy of the EIS. The hearing examiner ruled that King County had to conduct additional studies of seismic features on the treatment plant site. Because the additional studies showed evidence of an active fault on the site, King County is issuing a Supplemental EIS addressing the environmental impacts in the unlikely event a major earthquake were to significantly impact the Brightwater facilities. The Supplemental EIS also proposes mitigation that could lessen those impacts.

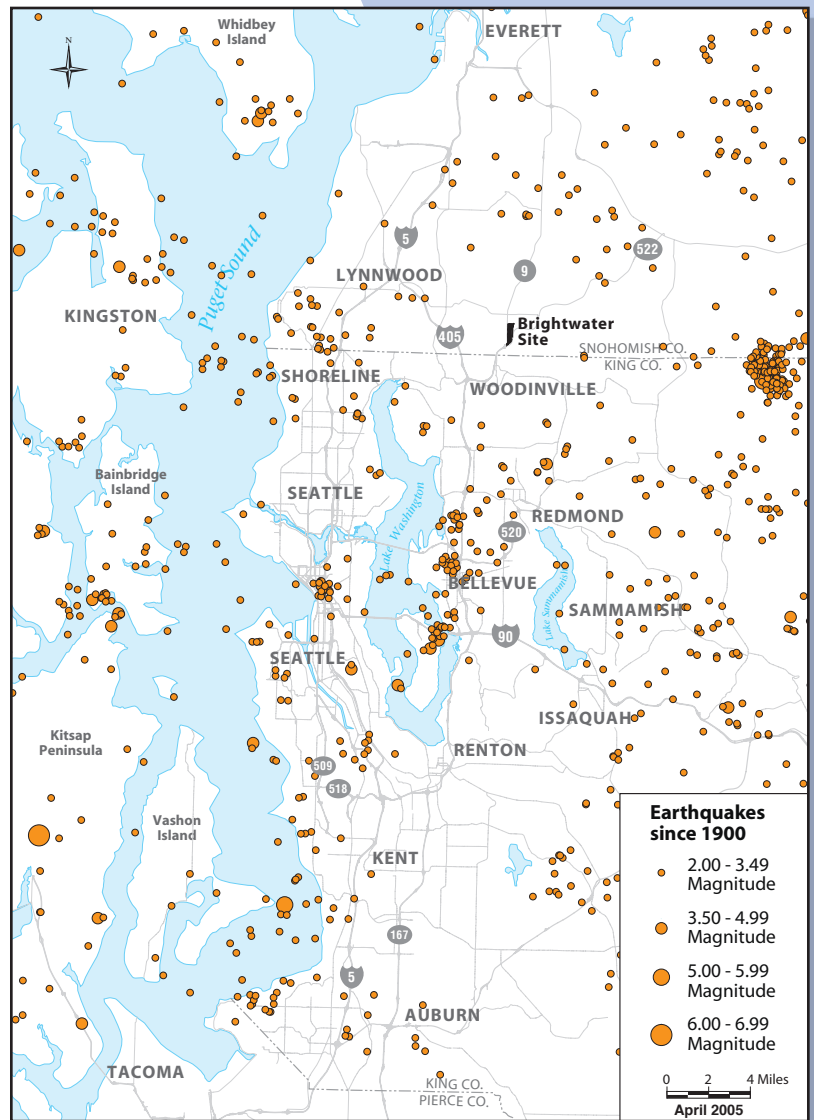
The Brightwater Final Environmental Impact Statement, or Final EIS, was issued in Nov. 2003 in accordance with the State Environmental Policy Act, or SEPA. The Final EIS evaluated the probable significant adverse impacts associated with building and operating Brightwater, and proposed mitigation.

Detailed information about the Brightwater environmental review process, including the full text of the Brightwater Final EIS, which includes public comments on the Draft EIS and responses, can be found on the project Web site at: <http://dnr.metrokc.gov/wtd/brightwater/env/index.htm> Paper copies and compact discs are available by contacting the Brightwater project team (see Pages 15 and 16)

The Pacific Northwest – A Seismically Active Region

Puget Sound is a seismically active region. There have been three large earthquakes in the past 60 years and many smaller ones. Even so, our region continues to grow as people move here for jobs, education, and the overall quality of life the Pacific Northwest offers.

No location is free from the risk of a natural disaster, and we must accept that earthquakes of varying magnitudes are going to occur here in the future. We cannot prevent earthquakes, but we can prepare for them by taking measures to protect people and property by designing facilities to withstand seismic activity, and developing emergency preparedness plans so we can respond appropriately in the aftermath of an earthquake.



Earthquake Data: USGS, 2005 (<http://quake.geo.berkeley.edu/anss/>)

Commonly used terms

A **fault** is a fracture along parts of the Earth's crust where two sides have moved relative to one another parallel to the fracture. According to the U.S. Geological Survey, a fault is considered active if it has moved one or more times in the past 16,000 years. Active faults are considered likely to move again at some point in the future.

A **lineament** is a linear alignment of landforms, including streams, low ridges, steps, cliffs, and ravines that may be the result of faulting, erosion, or glacial processes.

Liquefaction is the process of soil or sand behaving like dense fluid rather than a solid medium during an earthquake. Liquefiable soils under proposed treatment facilities at Route 9 will be moved prior to construction.

Surface rupture or deformation occurs when movement on a fault deep within the earth breaks through to the surface or causes the surface to deform vertically. NOT ALL earthquakes result in surface rupture or deformation.

HOW ARE EARTHQUAKES MEASURED?

The term "magnitude" refers to the measurement of the energy released at the source of an earthquake, which is determined by measurements on seismographs. The most well-known method of measuring the magnitude, or size, of an earthquake is the Richter Scale. However, seismologists also consider surface wave, body wave and moment magnitude to assess the size and intensity of an earthquake. More information about how earthquakes are measured is available on the USGS Web site at: <http://neic.usgs.gov/neis/general/measure.html>

For this study – and for designing the strength of Brightwater facilities – King County assumed an earthquake at the treatment plant site would coincide with strong ground shaking equivalent to the recent highly damaging earthquakes in Northridge, California (magnitude 6.7) and Kobe, Japan (magnitude 6.9).

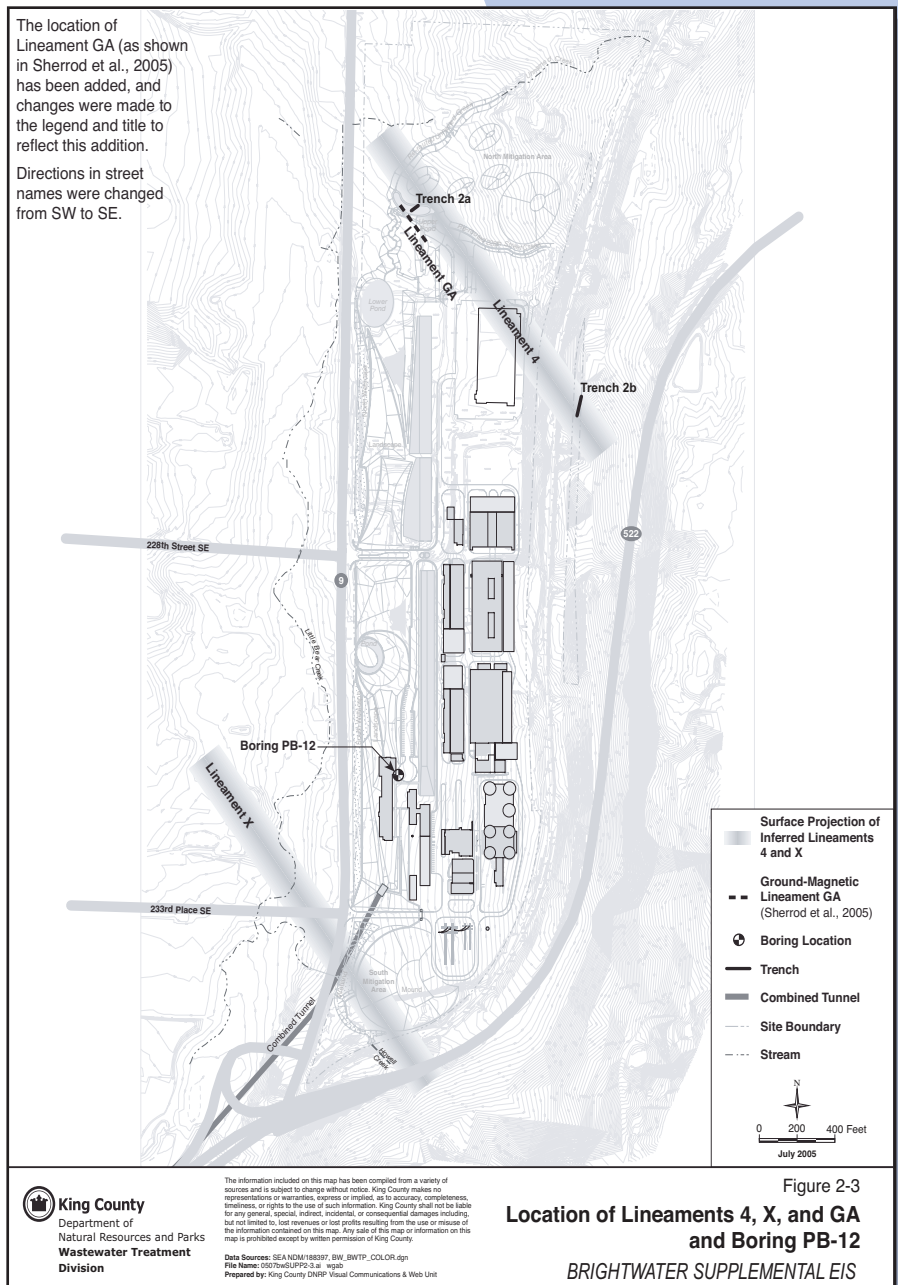
Are there any faults on the Route 9 site?

Yes. The South Whidbey Island Fault, or SWIF, is an active earthquake fault system that crosses the southern end of Whidbey Island and extends onto the mainland in southern Snohomish County in a northwest-southeast direction. Scientists currently believe it has several strands or lineaments running roughly parallel in a wide band.

Before 2003, there were little or no data indicating the SWIF had extended onto the mainland. However, recent studies by the U.S. Geological Survey, or USGS, have established that the fault does extend onto the mainland and that an active strand, known as Lineament 4, crosses the north portion of the treatment plant site where no new plant facilities are planned.

In October 2004, King County and the USGS conducted a trenching study of Lineament 4 indicating that up to three earthquakes occurred here in the past. The oldest took place 16,000 years ago and the youngest occurred within the last 2,730 years.

Data suggests that another seismic feature, known as Lineament X, may be present at the south end of the treatment plant site. While it is possible that Lineament X may be a fault, current data do not suggest it is an active fault with the same level of surface movement observed in the trench walls at Lineament 4. However, for this study and for design purposes, King County is treating Lineament X as an active fault and putting the new treatment process facilities hundreds of feet from either lineament which is a more than adequate measure of safety. Another magnetic anomaly called “GA” parallels Lineament 4 for a distance of about 240 feet, but there is no evidence that it extends into the area where proposed new facilities will be.



BRIGHTWATER AND POTENTIAL SEISMIC ACTIVITY

It is possible for an earthquake to occur on the Route 9 site during the expected 50 year design life of the Brightwater treatment plant, but it is very unlikely. However, it is impossible to predict exactly when and where an earthquake will occur and how strong it will be.

To prepare for the possibility, King County is designing Brightwater facilities to withstand very strong shaking from an earthquake on the treatment plant site.

How might an earthquake impact Brightwater?

Geologists continue to study seismic conditions in the Puget Sound region.

Records documenting earthquakes in the Puget Sound region have been kept for the past 160 years. While scientists believe there is a likelihood that a large earthquake will occur in the region over the next 50 years, historic data suggests it is highly unlikely that an earthquake would occur on Lineament 4 or Lineament X over the design life of the Brightwater treatment plant. The last three major earthquakes in the region have occurred more than 25 miles from the Route 9 site. And while there may be movement on Lineament 4 at some time in the future, it is much more likely that it would just cause shaking rather than rupture of ground surface which occurs very rarely. All three scenarios are extremely unlikely to occur during the lifetime of the Brightwater facilities.

Recent large earthquakes elsewhere in the region in 1949, 1965 and 2001 were all centered deep below the earth's surface and caused far less shaking at the Route 9 site than we are conservatively designing Brightwater facilities to withstand.

For the purposes of the Supplemental EIS, three hypothetical worst-case scenarios were analyzed to examine what might happen on the site during a major earthquake strong enough to rupture or deform the ground surface. None of the scenarios is likely to occur. The following scenarios are listed in order of relative likelihood.

Scenario A assumes a surface rupture on Lineament 4 and very strong shaking on the site. Lineament 4 does not cross under any planned treatment facilities, so this would cause limited damage to treatment facilities. Of all these unlikely scenarios, this scenario is believed to be the most plausible, since researchers have determined that Lineament 4 is an active fault.

Under Scenario A, the assumed level of ground shaking from a rupture on Lineament 4 would be higher than any large earthquake recorded in the Puget Sound region in the last 160 years. However, Brightwater facilities are being designed to withstand this level of intensity without collapse, major breaks or irreparable damage. Crews would immediately inspect the facilities and begin any minor repairs necessary.

Although it is the least unlikely of the scenarios we studied, the probability of it occurring during the life of the treatment plant is still extremely low.

Scenario B assumes a surface rupture on Lineament X at the south end of the plant site combined with very strong shaking and a break in the pipeline tunnel at the south end of the site. Scenario B is believed less likely to occur than Scenario A because there is only limited data to suggest that Lineament X is an active fault.

The displacement of the ground around the underground conveyance pipeline tunnel could cause the tunnel liner and piping systems within the tunnel to crack and possibly break and leak into surrounding soil. In this case, the pump station in Bothell would stop sending flows to Brightwater until repairs could be made to the pipeline.

Scenario C assumes the extremely remote possibility of a surface rupture of an unknown and hypothetical fault beneath treatment

plant structures on the site accompanied by very strong shaking and extensive damage to portions of the new treatment plant facilities. Scenario C is the most unlikely to occur.

There is no evidence of faulting between Lineament 4 and Lineament X in areas where new treatment facilities will be built, so it is unknown where in this area a surface rupture might occur. The specific environmental impacts of this highly unlikely worst case would vary depending on where the surface rupture occurred and which specific process facilities it affected. However, the impacts of this highly speculative scenario could be more severe.

If a rupture occurred under a treatment process tank or basin, that tank could crack and spill its contents. Below-ground tanks, if cracked, would leak to the ground, where tight soils would confine the water in the upper aquifer. The underdrain would be plugged as soon as possible to confine any leaked water from the basins so it could be pumped out of the ground. The underdrain system is a series of perforated piping beneath most buried facilities to relieve groundwater pressure on empty tanks.

Environmental impacts

If an earthquake were to occur on Lineament 4, the most plausible scenario, King County would shut down the plant for several hours to a few days to inspect for damage and make minor repairs. If this happened during prolonged wet weather, there could be overflows to Lake Washington or the Sammamish River.

An earthquake that caused a rupture under Brightwater plant facilities (Scenario B and the most unlikely Scenario C) could result in significant environmental impacts to surface waters and aquatic habitat.

The worst case would occur under Scenario C if the new fault developed under the solids digesters with such strong movement that one or more tanks split open. In this case, wastewater solids would flow overland via the plant drainage system and into Little Bear Creek. Aquatic wildlife would be killed because of the rise in water temperature and the drop in dissolved oxygen. After clean-up the stream would recover, but it would take months or even years to reach its pre-quake level of health.

In the case of Scenario C, depending on where the fault occurred, untreated or partially treated wastewater could be routed to the Puget Sound outfall via the combined tunnel until plant repairs were completed and plant operations restored, a period of up to a year.

Odors could also be expected, depending on the location of rupture, especially under Scenario C. The type and extent of any impacts would vary depending on which facilities were damaged, the severity of damage, the ability to route flows to the other two treatment plants, and the length of time needed to complete repairs of damaged facilities or equipment.

The chance of worst-case impacts is very low. No new facilities are planned over or near the fault called Lineament 4. However, the combined pipeline tunnel must cross suspected fault Lineament X (Scenario B). There is no evidence of a fault between Lineaments 4 and X in the area where wastewater facilities will be located, however, we analyzed the impacts of a new fault developing there as a most unlikely worst-case (Scenario C). Brightwater will be designed to withstand with only minimal damage the strong shaking of an earthquake that causes a rupture on the known fault on Lineament 4. However, we cannot prevent damage in the very unlikely event of a rupture occurring on an unknown fault directly under a treatment facility.

What would happen immediately after an earthquake?

In the immediate aftermath of an earthquake, on-duty staff would take roll-call and conduct search-and-rescue and first-aid. Plant personnel would then check the status of communication systems (phone, radio system, Internet).

Staff would perform an initial assessment of critical systems, which include electrical systems and generators, utilities and chemicals. They would begin inspections of pipelines, basins, tanks and buildings. If plant systems were severely damaged, staff would follow the protocols of the Emergency Flow Management System.

Emergency Procedures

King County has in place an Emergency Flow Management System, a five-part plan that would be implemented to protect public health and water quality during an emergency situation that impacted normal region-wide treatment system operations.

If an earthquake or other natural disaster disabled Brightwater facilities, King County would respond by:

- Diverting flows to the West Point and South Treatment plants
- Diverting excess flows into the existing Logboom and North Creek Storage Facilities
- Storing flows in new and existing conveyance pipelines
- Using emergency generators to keep new and existing pump stations operational during power outages
- Diverting untreated or partially treated wastewater through the effluent (treated wastewater) system and outfall to Puget Sound. In the event of a pipeline break at the treatment plant (described in Scenario B), an emergency diversion to the effluent pipe would be constructed at the location of the break, a process that would take several weeks to complete. King County could divert flows to the other plants until necessary repairs could be completed.

What else besides Brightwater would be affected?

An earthquake occurring as described by any of the three catastrophic worst-case scenarios could be expected to impact facilities and services across the Puget Sound region.

The Supplemental EIS analysis assumes that King County's other two regional treatment plants, West Point in Seattle and South Plant in Renton, would be operational following a large earthquake on the South Whidbey Fault, or SWIF. Wastewater flows from Brightwater could be temporarily diverted to one or both of these treatment plants, although in wet weather there would be untreated

overflows from pipes leading to the plants. Brightwater flows that did reach the plants would likely receive only primary treatment.

An earthquake on the SWIF with hard shaking would be expected to also cause off-site damage to roads and bridges, impact communication systems, and impact local water supply and utilities. Disruptions to these services would also affect the ability to repair and restore operation to the Brightwater plant.

Transportation

Some earthquake impacts, such as damage to roads, could cause disruptions for several months.

To address immediate concerns, equipment and materials for emergency use in the first two days after an earthquake would be stored on site. After that, helicopters and alternative routes would need to be used to bring in necessary personnel, equipment and supplies.

Utilities

It is estimated that 50 to 60 percent of the electrical system in the area would be out of service after a large earthquake but that most service could be restored within about 72 hours.

If the Snohomish County Public Utility District's services to the plant were disrupted, power generators on site or those brought in could provide sufficient short-term electricity to the plant to power control systems, life and safety features and equipment needed to provide limited treatment and discharge to Puget Sound.

Power generation for operating Brightwater's influent pump station bringing untreated wastewater to the plant would be provided on site at the North Creek pump station in Bothell.

Communication systems

The Nisqually Quake in 2001 demonstrated that telephone and cell phone service is unreliable during a large earthquake due to either damage to communication centers or jamming of the existing network. After a large earthquake, it may be difficult to reach engineers and technicians to evaluate damage or to order equipment and materials for repair work. King County has created its own 800 megahertz radio communication system to facilitate disaster response when normal communication systems may not be operational.

Water supply

Brightwater will get its water from the Cross Valley Water District. Water can also be supplied to the site by a line from the Alderwood Sewer District.

If strong shaking were to damage wells or water lines coming to the site, damage could be repaired within a few days or weeks.

The drinking water wells in the Cross Valley Aquifer would not be affected by any damage, leaks or spills at Brightwater because they are located upgradient of the Route 9 site.

The Cross Valley aquifer near the Brightwater Treatment Plant site is deep underground with a layer of tight soils between it and the surface. The drinking water wells in the aquifer would not be affected by a spill from Brightwater because they are located upgradient of the site.

If a tank damaged by a rupture during an earthquake spilled or leaked material, King County would begin clean up immediately. If it were not cleaned up, the spilled material could eventually over a period of years infiltrate slowly into groundwater (through the tight layer of soils) and flow toward Little Bear Creek. Because water would move slowly in the tight soils, all contamination could be removed before reaching Little Bear Creek.

Lessons learned from other treatment plants

Wastewater treatment plants are common in seismically active areas, such as California and Japan for example. Several plants have withstood strong shaking during major earthquakes and provide real-world examples of the performance of water and wastewater treatment facilities during earthquakes. They can also help us identify potential areas of damage to Brightwater facilities and learn how design and engineering methods could minimize or prevent similar types of damage.

The Supplemental EIS looked at four large recent earthquakes:

- In 1989, a magnitude 7.1 Loma Prieta Earthquake in Northern California affected wastewater treatment plants in Palo Alto, San Mateo, Hayward, and Santa Cruz.
- In 1994, the magnitude 6.7 Northridge Earthquake in Southern California affected the Valencia Water Reclamation Plant, the Saugus Water Reclamation Plant and the Los Angeles water treatment plant.
- In 1995, a magnitude 6.9 Kobe Earthquake in Japan affected the Higashinada Wastewater Treatment Plant and the Hanshin/Uegahara Water Treatment Plants.
- In 1999, the magnitude 7.6 Chi Chi Earthquake in Central Taiwan affected a number of dams, pipelines and treatment plants.

Damage reports from these plants show that current design standards proposed for Brightwater are effective at protecting the structural integrity and operation of the plant.

Each of these earthquakes produced ground motions similar to or exceeding the ground motions estimated for Brightwater. None of the plants affected by these earthquakes were damaged severely enough to create significant environmental impacts, and even the most severely damaged plants returned to normal operational condition within a few months. In cases where chemical lines or pipes were damaged, the secondary containment system prevented leakage from discharging to the environment. Brightwater's chemical storage tanks and pipes will be designed to the same standards.

In each of these earthquakes, most damage was attributed to spreading caused by liquefaction or

from settlement. At Brightwater, liquefaction is not expected beneath the new treatment plant structures because they will be built on soils that are not susceptible to liquefaction.

The “lessons learned” provide an extremely valuable basis for designing future wastewater treatment plants in seismic areas, and this knowledge is being applied to the design of Brightwater facilities.

Mitigation to minimize impacts from earthquakes

Major damage from an earthquake at Brightwater is very unlikely. The facilities will be designed to withstand a very large earthquake on the treatment plant site (Scenario A). King County will be able to mitigate impacts from the highly unlikely scenario that a ground rupture would occur directly under one of the Brightwater facilities, causing a spill (Scenario C).

Designing buildings to withstand earthquakes

King County is implementing design methods at Brightwater that would minimize damage and impacts if an earthquake were to cause high levels of ground shaking on the site.

King County will meet the latest building code standards, or exceed them by additional measures that will help protect the facilities in the event of an earthquake. These include:

- New facilities are located several hundred feet from Lineament 4 and Lineament X, the two most likely sources of fault offset on the site.
- Upgrading seismic standards for buildings that contain plant operation control rooms to increase the likelihood of continued operation following strong ground shaking.
- Increasing load design for walls and tank lids for greater strength and protection during strong ground shaking.
- Designing water-holding features with additional reinforcing steel beyond standard requirements for seismic design.
- Designing flexible piping systems to allow relative movement between the structures, minimizing potential for leaks.
- Locating and designing chemical storage and containment areas to prevent mixing of chemicals.
- Isolating individual basins and equipping water-containing basins with shut-off valves and gates so that individual tanks and conveyance structures could be taken off-line and the waste treatment process could bypass the damaged unit.
- Incorporating sumps and access hatches in design to allow easy access to tanks that have been damaged or need to be taken out of service.
- Installing remote controlled valves to isolate the stormwater from Little Bear Creek in the event of an onsite spill.

- Providing auxiliary power so that the plant can remain operational in the event an earthquake disrupts power feeds to the plant.

Another important consideration is that Brightwater will be designed to function as part of the larger King County regional wastewater treatment system. One of the benefits of a regional system is that flows can be directed to other plants in the event one is disabled.

Protecting the environment

Despite the fact that a surface rupture anywhere on the Route 9 site is extremely unlikely in the lifetime of the plant facilities, King County is taking added measures of caution by studying worst-case scenarios. Analyzing the potential impacts helps us develop plans so we can respond quickly to repair damage and begin clean-up and remediation.

Water quality

King County is committed to protecting public health and the environment – it is why we treat wastewater.

In a severe earthquake where pipeline or process facility damage resulted in a spill, King County would immediately respond to begin initial clean-up, followed by long-term clean up and monitoring.

To protect groundwater resources, any leaking tank, container or piping system would be isolated and pumped out as quickly as possible and its contents would be pumped to adjacent, undamaged facilities. The very low permeability of the site soils would contain the leaks to the immediate vicinity of the failure for months to years allowing time for clean up. Contaminated soils near leaks or spills could be excavated. Other actions could include installing wells or cutoff trenches and pumping and treating the contaminated groundwater.

The drinking water wells in the Cross Valley Aquifer would not be affected by Brightwater because they are located upgradient of the treatment plant site.

If leaks or spills impacted surrounding groundwater or soils, King County would work with the Department of Ecology to develop a remediation plan.

In a worst-case scenario, where a sudden spill entered surface waters, King County would act quickly to inspect, clean up and restore the environment.

Air quality and odor

Brightwater will have a state-of-the-art odor control system that will prevent odors from impacting the community, even during power failures or system repairs.

However, in the event a ground rupture under a structure causes an overflow or spill, there will be odor from released

material. The extent of odors and air emissions would depend on the type and quantity of leaked or spilled material, the concentration of odorous materials and the weather conditions at the time of the event.

A number of mitigation measures have been incorporated into the Brightwater emergency response program to minimize both odors and air emissions following a possible leak or spill. Prompt clean-up measures described above for water quality would reduce odors to a large extent. Additional measures include:

- Training staff to handle clean-up, neutralization and/or containment of potential off site spills or overflows.
- Starting clean up and neutralization activities as soon as reasonably possible after an earthquake to minimize odors, odor generation, and air emissions.

Chemical safety

Chemicals are used in the wastewater treatment process to treat and disinfect wastewater. In a severe ground rupturing earthquake on a hypothetical fault under one of the chemical storage facilities, some of these chemicals could leak or spill. For safety, chemicals that could produce a toxic effect when mixed will be stored in separate buildings 1200 feet apart in areas that drain to separate stormwater systems. These measures would make it virtually impossible for these chemicals to mix. In addition, special valves will be installed at the outlets of the stormwater systems so they can be isolated from Little Bear Creek in the event of a spill.

King County prepares for emergencies

There is no way to know when and where disasters will occur. Building codes and other regulations provide protection against strong earthquakes, but structural damage to our wastewater treatment facilities and environmental impacts are still possible. King County has retrofitted its older facilities to provide greater protection, and the county also maintains a protocol to inspect and repair facilities, with those posing the highest risks getting attention first.

In an emergency, King County will always take measures to keep wastewater away from the community where it can harm public health. The five-step Emergency Flow Management Plan helps ensure that wastewater in the system reaches a plant for treatment before it is discharged. However, in a disaster that results in widespread power outages and/or if a treatment plant is out of service, spills or overflows resulting in adverse impacts to streams and Lake Washington could occur for a period of time. In a catastrophic natural disaster such as a major earthquake, local, state and/or federal emergency management agencies take charge and repairs to infrastructure such as treatment plants are prioritized according to their importance.

Fortunately, catastrophes are rare. However, the community can be assured that public safety officials and service providers such as fire, police, power companies and water purveyors plan and prepare for disasters so that the public will be protected to the greatest possible extent when disaster strikes.

Overview of Comments on the Draft Supplemental EIS

When the Draft Supplemental EIS was issued on April 11, 2005, it marked the beginning of a 30-day comment period during which community members had the opportunity to review the document and make comments on the analysis.

King County received 600 formal comments from two agencies, three organizations and 26 individual community members, and all of these comments received a response in the Final Supplemental EIS. The comments and responses are available on the Web at <http://dnr.metrokc.gov/wtd/brightwater/env/seis.htm> or by contacting the Brightwater office for a compact disc or paper copy (See Pages 15 and 16).

Comments and questions that came up frequently or focused on specific themes or ideas received a detailed response in a Summary Comments section which is also available in the Final Supplemental EIS.

Below is a brief outline of the types of comments King County received, providing a general overview of the issues raised by members of the public. People seeking greater detail, including answers to the questions, are encouraged to review the full Comments and Responses section in the Final Supplemental EIS. To get a copy, please see Pages 15 and 16.

Comment Summary

Scope of the Supplemental EIS

Several comments included questions about the State Environmental Policy Act, or SEPA, and the Brightwater environmental review process as a whole. Other comments requested more information about the scope of the Supplemental EIS and asked why King County was issuing a Supplemental EIS. Other questions asked what types of environmental review processes might take place in the future.

Executive's Decision

Comments included questions about the criteria the Executive will consider in making a decision to move forward with the Brightwater project. Some comments included questions about evaluating other sites where earthquake faults have not yet been identified.

Seismic Design Standards

Several comments asked for detailed information about the design methods that would be used at Brightwater to minimize damage and impacts from earthquakes. Some comments wanted an explanation about the requirements of the International Building Code (IBC 2003) and how they were being applied to Brightwater planning and design. Other comments contained questions about the design standards of buildings where chemicals would be stored. Other comments asked for clarification about the meaning of the term “50-year design life” and why the IBC 2003 requirements are based on a 50-year period.

Understanding Seismic Risks

Several comments expressed the view that King County must protect the public from damage that could result from an earthquake on the treatment plant site. Comments asked for more information about the probability of an earthquake occurring on the South Whidbey Island Fault in the Woodinville-Maltby area.

Worst-Case Scenario

Comments contained questions about why King County evaluated “worst-case” scenarios and how King County determined what the worst-case scenarios were. Some comments asked questions about what might happen if the earthquake were more severe than what was discussed in the Supplemental EIS.

Trenching and Geological Studies

Comments asked why geologists only trenched two locations on the Route 9 site and what the reasons were for not doing additional trenching in other locations on the site. Other comments asked about what other seismic fault features could exist on the site.

Other Large Earthquakes

There were several questions about how large earthquakes in other areas have historically affected infrastructure, specifically wastewater treatment plants. Some questions asked why the Supplemental EIS referenced the earthquakes in Kobe, Japan; Northridge, Calif.; Loma Prieta, Calif., and Chi Chi, Taiwan.

Chemical Safety

Questions focused on the type of chemicals that will be used and stored at Brightwater, and whether or not these chemicals could be considered hazardous. Comments asked for more details about the potential for a chemical release or spill after an earthquake, where spilled or leaked chemicals might go and the effect that might have on people and wildlife, and what measures will be implemented into project design to prevent or reduce the impacts of a chemical release.

Emergency Response

Several comments focused on the aftermath of the earthquake and requested information about King County’s disaster response plans. Comments asked for information about how long it would take to repair damaged facilities, how King County would continue sewer service if Brightwater were damaged or offline, and what King County would do to clean up any released sewage or chemicals if damaged facilities spilled or leaked their contents. Other comments asked for information about how King County would coordinate with other agencies during emergency conditions.

More information

For information on local emergency management planning and response, visit the following Web sites:

King County Office of Emergency Management
<http://www.metrokc.gov/prepare/default.aspx>

Snohomish County Department of Emergency Management
<http://www.snodem.org/>

Several agencies and organizations offer emergency preparedness information for individuals. Some resources include:

Are You Ready? An In-depth Guide to Citizen Preparedness
from the Federal Emergency Management Agency
<http://www.fema.org/areyouready/>

The U.S. Geological Survey's Web site Frequently Asked Questions
on what to do before, during and after an earthquake
<http://earthquake.usgs.gov/faq/prepare.html>

The American Red Cross Snohomish County Chapter
<http://snohomishcounty.redcross.org/>

The King & Kitsap American Red Cross
<http://www.seattlredcross.org/>

Community members without Internet access can contact the Brightwater project team for more information on how to access these resources.

Need more detail?

Get a full copy of the Supplemental EIS

This document is a summary of the documents that comprise the Final Supplemental EIS. Full copies of the Final Supplemental EIS are being distributed to affected jurisdictions and agencies as well as to interested citizens and community groups.

The Final Supplemental EIS can be viewed on the Internet at:
<http://www.dnr.metrokc.gov/wtd/brightwater/env>

CDs and a limited number of paper copies of the Final Supplemental EIS are available from King County. CDs and paper copies can be picked up at the two locations below:

King County Wastewater Treatment Division

201 South Jackson Street, 5th floor reception desk,
Seattle, WA

Brightwater Project Office,

22509 SR-9 SE, Suite 101
Woodinville, WA

To request copies by mail, please call the Brightwater Project Team at 206-684-6799 or toll free 1-888-707-8571.

Paper copies of the Final Supplemental EIS will be available for review at several local and regional libraries.

King County Library System

Bellevue Regional
Bothell Regional
Shoreline
Woodinville
Kenmore

Kingsgate Library (Kirkland)
Lake Forest Park
Richmond Beach

Sno-Isle Library System

Mountlake Terrace

Other Libraries

King County Technical Document
and Research Center
Municipal Research &
Services Center
Seattle Public Library
UW Suzzallo
UW Bothell

Contact the Brightwater project office

To request copies of the Final Supplemental EIS by mail, or to speak to a staff member about other project-related issues, please contact the Brightwater Project Office:

Phone

206-684-6799

Toll-free: 1-888-707-8571

Relay Service 711

E-mail

Brightwater@metrokc.gov

To request copies of Brightwater materials in accessible formats, call 206-684-1280 or Relay Service 711.